AMENDMENTS TO THE CLAIMS

Please replace all previous versions of the claims with the following listing:

1. (Currently Amended) An apparatus for directing a gas from an upstream conduit through a vessel wall for cleaning surfaces within the vessel comprising:

a mounting flange for coupling the apparatus to the upstream conduit delivering the gas and having:

~~first~~ upstream and ~~second~~ downstream faces;

an ~~inboard~~ interior surface bounding a central aperture;

an outboard perimeter having at least one cooling fluid inlet;

at least one radially extending passageway through the flange in communication with the at least one cooling fluid inlet; and

an array of bolt holes between the ~~first~~ upstream and ~~second~~ downstream faces;

a conduit, in communication with the at least one radially extending passageway, extending downstream from the flange and having:

inner and outer walls along at least a portion of a length; and

a space between the inner and outer walls for carrying a cooling fluid~~;~~

~~a cooling fluid inlet~~; and

a cooling fluid outlet.

2. (Original) The apparatus of claim 1 wherein:

the space extends from an upstream end outside the vessel wall at least partially downstream within the wall.

3. (Currently Amended) The apparatus of claim 1 wherein:

the cooling fluid outlet is along the conduit~~; and~~

~~the cooling fluid inlet is along the flange~~.

4. (Original) The apparatus of claim 3 wherein:

the inner and outer walls each have a downstream rim; and

the cooling fluid outlet is between the inner and outer walls.

5. (Currently Amended) The apparatus of claim 1 wherein:

the inner wall is essentially formed by a first tubular piece extending from an upstream rim to a downstream rim and having interior and exterior surfaces, along an upstream portion, the ~~interior~~ exterior surface ~~providing~~ contacting the flange ~~inboard~~ interior surface.

6. (Withdrawn) The apparatus of claim 1 in combination with:

said upstream conduit coupled to the flange;

said vessel, being a furnace, having a furnace wall separating a furnace exterior from a furnace interior and having a wall aperture; and

a detonative source of said gas.

7. (Withdrawn) The combination of claim 6 wherein:

the flange is upstream of an exterior surface of the furnace wall;

the conduit extends through the furnace wall to protrude downstream of an interior surface of the furnace wall; and

the cooling -fluid outlet is within the furnace interior.

8. (Currently Amended) A soot blower nozzle comprising:

~~means~~ a flange for mounting the nozzle to an upstream soot blower gas conduit; and

a surface for guiding gas from the soot blower gas conduit into the interior of the vessel; ~~and~~

~~means for cooling the nozzle~~ wherein the flange includes at least one cooling fluid inlet at an outboard perimeter in communication with at least one passageway extending radially inward therefrom to supply cooling flow to the surface.

9. (Withdrawn) A method for operating an apparatus for cleaning interior surfaces within a vessel having a vessel wall, the method comprising:

causing a combustion pulse in a combustion conduit;

directing combustion gases along the combustion conduit through the vessel wall to be ejected from an outlet of the combustion conduit; and

passing a cooling gas along a portion of the combustion conduit exposed to heat from the vessel.

10. (Withdrawn) The method of claim 9 wherein:

said passing is essentially continuous between a plurality of said combustion pulses.

11. (Withdrawn) The method of claim 9 wherein:

said passing comprises passing the cooling fluid along a path at least partially surrounding a portion of a combustion gas flowpath.

12. (Withdrawn) The method of claim 9 wherein:

said passing comprises passing the cooling fluid along a path into the vessel interior.

13. (Withdrawn) The method of claim 9 wherein:

the passing is along an open flowpath discharging into the vessel interior.

14. (Withdrawn) The method of claim 9 wherein:

the passing comprises passing downstream between inner and outer walls of the combustion conduit.

15. (Withdrawn) The method of claim 14 wherein:

the passing is along an open flowpath discharging into the vessel interior.

16. (Withdrawn) The combination of claim 7 wherein:

the cooling fluid outlet is open to the vessel interior.

17. (Withdrawn) The combination of claim 7 wherein:

the cooling fluid outlet is between the inner and outer walls.

18. (Withdrawn) The combination of claim 7 wherein:
the cooling fluid is a cooling gas.

19. (Withdrawn) The combination of claim 18 wherein:
the cooling fluid outlet is open to the vessel interior.

20. (Withdrawn) The combination of claim 19 wherein:
the cooling fluid outlet is between the inner and outer walls.

21. (Withdrawn) The combination of claim 19 wherein:
the space extends from an upstream end outside the vessel wall at least partially downstream within the wall.